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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,042	01/18/2006	Susumu Kawato	10873.1843USWO	3691
52835 7590 02/13/2008 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER ZACHARIA, RAMSEY E				
ART UNIT 1794		PAPER NUMBER		
MAIL DATE 02/13/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/565,042

**Applicant(s)**

KAWATO ET AL.

**Examiner**

Ramsey Zacharia

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-08)
- Paper No(s)/Mail Date 3/16/2006
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Felix et al. (US 5,589,558).

Felix et al. teach a polytetrafluoroethylene modified with 0.02-1 wt% of a perfluoroalkyl vinyl ether (abstract). The modification results in a polymer having improved dielectric strength (column 1, lines 41-48).

The limitations of claim 3 are taken to be met since dielectric constant and volume resistivity are material properties and the material of Felix et al. appears to be the same as the modified polytetrafluoroethylene of the instant application.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodera et al. (US 5,589,558) in view of Felix et al. (US 5,589,558).

Kodera et al. teach an electret transducer formed from a resin sheet, such as a polytetrafluoroethylene sheet, adhered to a backplate (column 1, lines 47-61). The backplate may be made of metal, such as aluminum (column 4, lines 44-49).

Kodera et al. do not teach that the resin sheet is a modified polytetrafluoroethylene. However, Kodera et al. do teach the use of polytetrafluoroethylene as the resin sheet.

Felix et al. teach a polytetrafluoroethylene modified with 0.02-1 wt% of a perfluoroalkyl vinyl ether (abstract). The modification results in a polymer having improved dielectric strength (column 1, lines 41-48).

One skilled in the art would be motivated to use the modified polytetrafluoroethylene as the resin sheet in Kodera et al. because it has improved dielectric strength which will result in an improved electret transducer.

The limitations of claim 6 are taken to be met since dielectric constant and volume resistivity are material properties and the material of Felix et al. appears to be the same as the modified polytetrafluoroethylene of the instant application.

6. Claims 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodera et al. (US 5,589,558) in view of Kang et al. (US 6,334,926).

Kodera et al. teach an electret transducer formed from a resin sheet, such as a polytetrafluoroethylene sheet, adhered to a backplate at a temperature of 280-400 °C (column 1, lines 47-61). The backplate may be made of metal, such as aluminum (column 4, lines 44-49).

Kodera et al. teach neither the water contact angle of the surface of the resin sheet bonded to the metal plate nor that the surface of the resin sheet is subjected to an adhesion-improving treatment.

Kang et al. teach a method for low temperature lamination of a metal to the surface of a fluoropolymer (column 1, lines 8-13). The method comprises subjecting the surface of the fluoropolymer to be bonded to the metal with a plasma pretreatment (column 2, line 55-column 3, line 4). Monomers containing imidazole, epoxide, anioninc, cationic or amphoteric functional groups are then surface grafted onto the pretreated surface (column 4, lines 25-33). The embodiment of the Examples illustrates that pretreatment allows for lamination at a temperature of 120 °C while still resulting in peel strengths of 6-9 N/cm.

One skilled in the art would be motivated to subject the surface of the resin sheet of Kodera et al. to the treatment regimen of Kang et al. to enable resin sheet and backplate to be bonded together at a lower temperature, thus reducing operating costs.

Regarding the limitation directed to the contact angle of water in claim 9, this limitation is taken to be met since imidazole, epoxide, anioninc, cationic or amphoteric functional groups are polar in nature. Thus, grafting such groups onto the surface of polytetrafluoroethylene would

be expected to lower the contact angle of water since water is also polar and would be expected to wet a surface having polar groups grafted thereon.

The limitations of claims 11 and 17 are taken to be met since dielectric constant and volume resistivity are material properties and the material of Kodera et al. (polytetrafluoroethylene) appears to be the same as the polytetrafluoroethylene of the instant claims 9-19.

### *Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ramsey Zacharia/

Primary Examiner, Art Unit 1794